

Application Serial No. 10/729,882
Response to Office Action of March 21, 2006

REMARKS

Claims 1-3 and 5-23 are pending in the application. Claims 1, 3, 5-6, 10-11, 15-18, and 20-21 have been amended, and claim 4 has been cancelled. No new matter has been introduced by the amendment.

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REJECTION UNDER 35 U.S.C. §103(a)

Claims 1-23 have been rejected over De in view of Buchwalter et al. and Hiyamizu et al. This rejection is overcome in view of the amendment of claims 1 and 10 together with the following remarks.

Claim 1, as amended, recites a method for processing a workpiece that includes fastening a workpiece to a work carrier by means of a solid that is applied in liquefied form. The work carrier comprises a porous material including a plurality of pores at least a portion of which are interconnected. The plurality of pores accommodates a portion of liquefied solid upon application of vacuum pressure to the work carrier. The method further includes hardening the liquefied solid and processing the workpiece while holding the workpiece on the work carrier. Solvent is applied through the plurality of pores to dissolve the solid and to release the workpiece from the work carrier. The applicants assert that claim 1 is not suggested or disclosed by the cited references taken alone or in combination.

In contrast to the applicants claimed method, De fails to suggest or disclose a work carrier that includes a plurality of pores at least a portion of which are interconnected, as acknowledged on page 2 of the instant Office Action. Further, De fails to suggest or disclose pores that are configured to accommodate a portion of a liquefied solid upon application of vacuum pressure to the work carrier.

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The addition of Buchwalter et al. does not overcome the efficiencies of De. The applicants respectfully disagree with the characterization of Buchwalter et al. set forth in the instant Office Action. In FIG. 9, Buchwalter illustrates a transfer plate (404) having a photoresist layer (402) thereon. Chiplets (202) are in contact with the photoresist layer (402). The chiplets are released from the chiplets subplate (200) by etching away a parting layer (306) position between a glass substrate (302) and the chiplets (202). (Paras. 0052 and 0053). The chiplets are transferred to a transfer plate (406) by applying a vacuum through the transfer plate (406) to lift the chiplets off the transfer plate. (Figs. 11 and 12, Para. 0055). Accordingly, there is no suggestion within Buchwalter et al. of fluid penetration through a porous carrier to release elements from the carrier as stated in the instant office action. Instead, the chiplets are release from the chiplet substrata (200) by etching away a parting layer (306) (Fig. 10, Para. 0053).

The applicants assert that even if one skilled in the art were somehow motivated to combine the chiplet transfer process of Buchwalter, et al. with the wafer handling apparatus of De, the combination would fail to provide the method recited in claim 1.

The further addition of Hiyamizu et al. does not overcome the deficiencies of De and Buchwalter et al. Hiyamizu et al. do not suggest or disclose that a work carrier accommodate the fastening of a workpiece to the work carrier by means of a solid that is applied in liquefied form. Further, Hiyamizu et al. do not suggest or disclose that the work carrier include a plurality of pores configured to accommodate

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a portion of the liquefied solid. In addition, none of the cited references suggest or disclose that the liquefied solid be hardened and processing of the workpiece be carried out followed by applying a solvent through the plurality of pores to dissolve the solid.

Claims 2-3, 5-9 and 12-21 depend either directly or indirectly from claim 1. These claims further describe the method of claim 1 and are allowable in view of the amendment and remarks pertaining to claim 1.

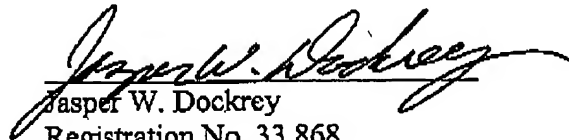
Claim 10 recites a work carrier for processing a work piece in which the work carrier comprises a porous material including a plurality of pores at least a portion of which are interconnected. The porous are configured to accommodate a portion of the liquefied solid upon application of a vacuum pressure to the work carrier. The pores are further configured to accommodate the solid upon hardening and to provide for a flow of solvent there through to dissolve the hardened solid. The applicants assert that the cited references do not suggest or disclose the claimed work carrier.

Claims 11 and 22-23 depend from claim 10 and describe further aspects of the work carrier of claim 10. These claims are allowable in view of the amendment and remarks pertaining to claim 10.

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The applicants have made a novel and non-obvious contribution to the art of semiconductor fabrication technology and handling equipment. The claims that they should distinguish over the cited references and are in condition for allowance. Accordingly, such allowance is now earnestly requested.

Respectfully submitted,


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